

Sight-Saving Classes

Organization and Administration

1937

Winifred Hathaway

Associate Director, National Society
for the Prevention of Blindness

Hazel Hadley McIntire

Director of Special Classes
Ohio State Department of Education

National Society for the
Prevention of Blindness, Inc.

50 West 50th Street, New York, N. Y.

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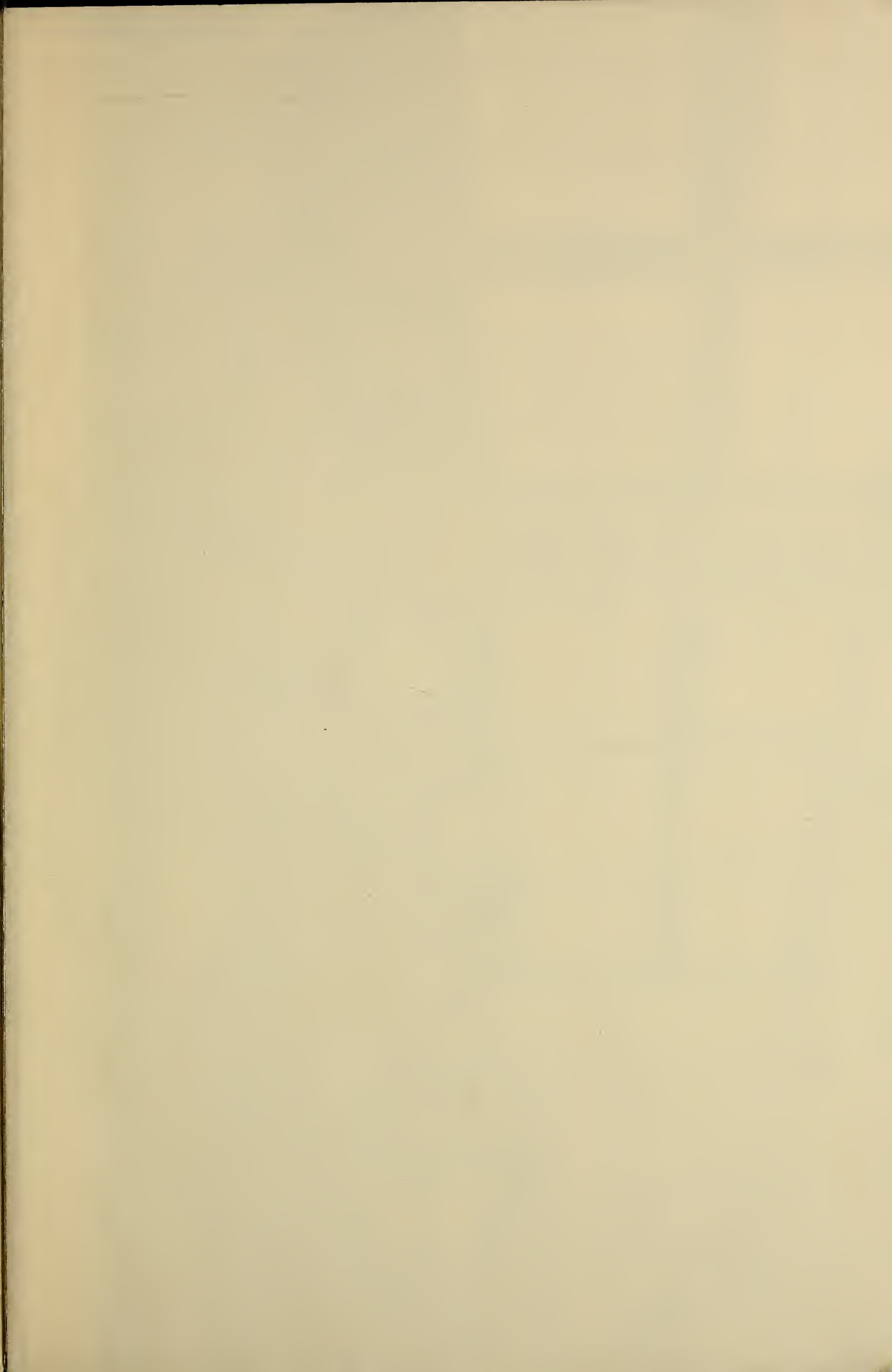
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A Well-Equipped, Well-Lighted, Sight-Saving Classroom

Sight-Saving Classes— Their Organization and Administration

Introduction

SIGHT-SAVING classes as a form of specialized education are a comparatively recent development. They originated in England in 1908. The first class in America was established in Boston in 1913, through the efforts of Dr. Edward E. Allen. The growth has been relatively slow, but these classes are now generally accepted by school administrators as an essential part of any school system differentiated to meet varying educational needs.

Purpose of Sight-Saving Classes

The purpose of these classes is to make possible an education for children who are not blind but who, because of serious eye difficulties, cannot advantageously carry on their school work under conditions provided for the normally seeing. The ultimate object, as in all education, is to make possible for the child an opportunity to develop to the fullest his innate abilities.

Conserving Vision

The evident relationship between eye health and efficiency and present-day methods of education calls for special attention to conserve sight. The authorities of every school system have to consider four groups of pupils:

1. Children with normal vision.

The responsibility of the school system for this group is to make every effort to keep the vision normal through attention to general health and eye hygiene and to the cor-

rect physical surroundings and equipment of classrooms, including lighting, seating, ventilation and the use of well-printed textbooks.*

2. Children with defects of vision that may be corrected or diseases of the eye that may be successfully treated.

Here the responsibility must, of course, include provision of the benefits for the first group and, in addition, co-operation with the parents in having the necessary correction or treatment that will bring the child's vision as near to normal as possible.

3. Children with serious eye difficulties that are not sufficiently amenable to correction or treatment to enable them to use advantageously equipment provided for the normally seeing.

4. Children who are totally blind or who have such low visual acuity (less than 20/200) that they cannot use the sense of sight as the chief avenue of educational approach to the brain, hence are candidates for schools or classes established for the education of the blind.

It is with the educational problems of the third group that this publication is concerned.

Educational Facilities

The best way yet found for educating children with seriously defective vision is to provide the advantages of special classes which are known as sight-saving or sight-conservation classes. Pupils requiring such advantages are usually designated as partially seeing children.

Community Needs for Sight-Saving Classes

The most conservative estimate of the number of pupils requiring special educational facilities offered by sight-saving classes is one in a thousand of the school population,

* *Conserving the Sight of School Children*. Report of the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association with the co-operation of the National Society for the Prevention of Blindness, revised 1935.

but those who have had long experience in this work have found the proportion to be more nearly one in five hundred; in industrial or overcrowded communities, the percentage may be even higher. From these estimates, a superintendent of schools may determine roughly the number of those in his school system who need this type of education.

Pupils Eligible for Sight-Saving Classes

Children may be considered eligible for sight-saving classes if they are in any of the following groups:

1. Children having a visual acuity between 20/70 and 20/200 in the better eye, after refraction.
2. Children with progressive eye difficulties.
3. Children suffering from non-communicable diseases of the eye or diseases of the body that seriously affect vision.

During the past decade much attention has been given to the effect of eye difficulties on educational processes and to the psychological reactions of physical disabilities. As a result, it is well to consider the placement in a sight-saving class of the following three other groups of children as a temporary measure:

1. Children who have had eye operations (particularly enucleation) as a result of which re-adaptation in eye use, or psychological readjustment, is necessary.
2. Children who are suffering from muscle anomalies requiring re-education of the deviating eye in cases in which an untoward psychological reaction is manifested.
3. Children recovering from diseases such as measles, who need special eye care until they are able to assume the full responsibility of regular grade work.

It is evident that many factors must be taken into account in deciding the placement of partially seeing children. Hence, each case must be considered individually.

Children assigned to sight-saving classes should have normal mentality.

Organizing a Sight-Saving Class

Finding Partially Seeing Pupils

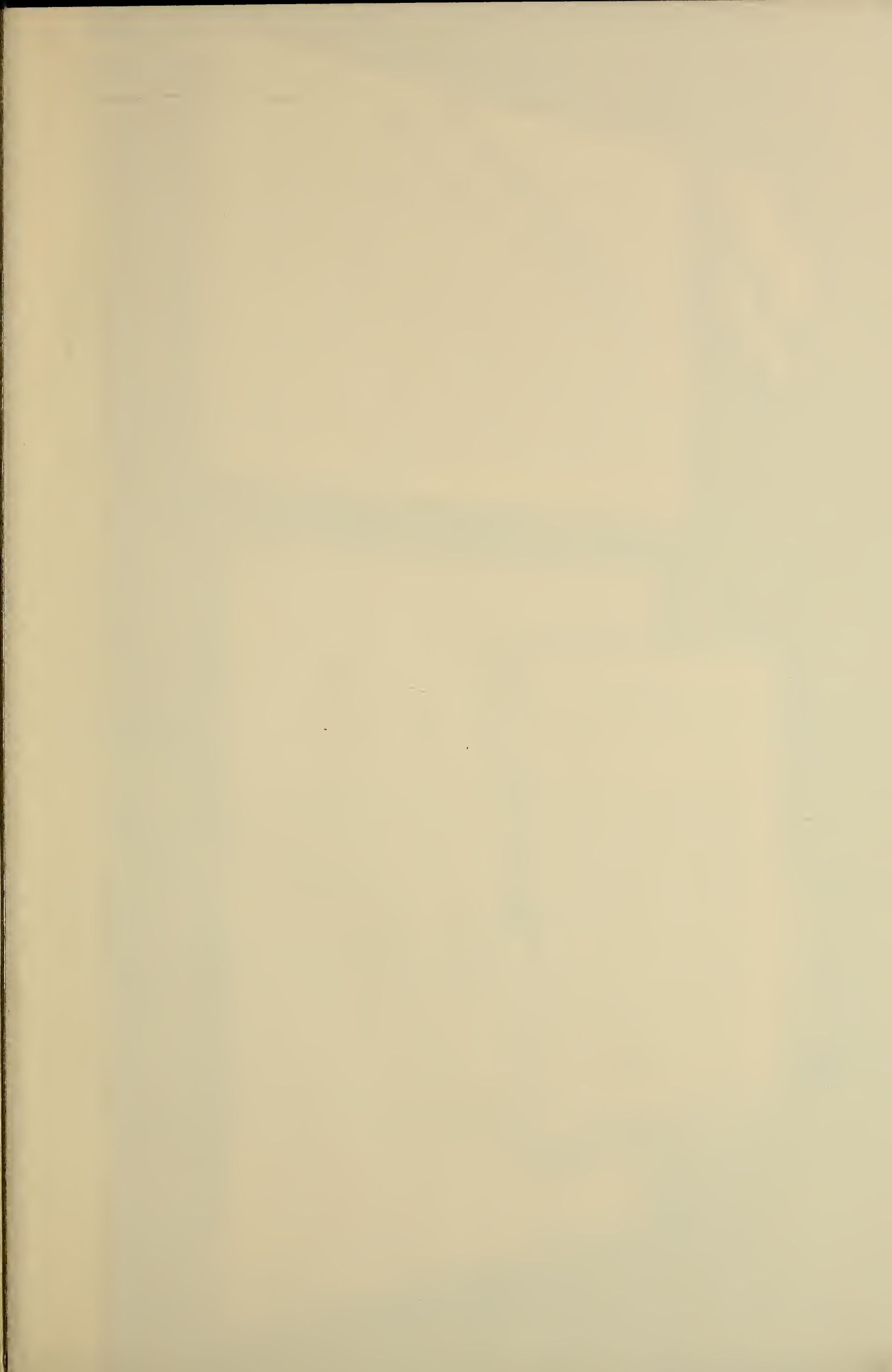
When the probable need in a city for a sight-saving class has been determined, the next step toward its establishment is to find the pupils who are eligible. The most satisfactory and, in the long run, the most economical method of discovering those with eye difficulties is by means of a thorough medical examination of all children entering school and at least twice thereafter during their school life. Many eye difficulties may thus be discovered in time to overcome them, and children with such serious eye troubles that special educational advantages are necessary may be placed in sight-saving classes early in their educational career.

If, however, such a procedure is impossible, a careful eye test will indicate those who should be reported for special attention. Usually deductions may be drawn from school health records. Any well-trained teacher should be able to detect, through observation, eye difficulties that interfere with educational processes. Eye physicians should be encouraged to report to educational authorities children found in their private or clinic practice with serious eye troubles.

Grade and Differential Placement

It is usually considered advisable to establish the first sight-saving classes in a school system in the elementary grades; the earlier partially seeing children are given attention, the greater is the hope of success. The number of pupils who can be efficiently accommodated in one group is small because of two factors: the problems arising because of the particular eye difficulty of each individual, and the necessity for grouping in one class children representing several grades.

It is difficult for a teacher of a sight-saving class to care



Have blossoms in the spring?
In the apple blossoms in
Beneath the pink cascades
When falling,
are the silver brooklets
And the thrushes softly
calling,
In the spring?
If you have not, then you
know not, in the spring,

THE SHEPHERDESS AND THE CHIMNEY
SWEEP
In the corner of the parlor stood a large wooden cupboard.
It was very old and no one knew how long
it had stood there. Probably somebody's great
grandmother had left it standing there long before
the first child was born.
The old cupboard stood along the opposite wall. The
children were always on the edge of it, and they
were always looking at it. They were always
looking at it. They were always looking at it.
The children were always on the edge of it, and they
were always looking at it. They were always
looking at it. They were always looking at it.

—William Martin.

The Shepherdess and the Chimney Sweep

In the corner of the parlor
stood a large wooden cupboard.
It was very old and no one
knew how long it had stood
there. Probably somebody's
great-grandmother had left it



A Comparison of Materials for Sight-Saving Class Children With Those for Normally Seeing Children

adequately for children in more than four grades, although it is often necessary to accept children in grades 1 through 6, sometimes even through grade 8. In classes in which not more than four grades are represented, adequate attention can be given to approximately sixteen children. In places in which two or more classes can be placed in one building, a larger number of pupils may be accommodated by dividing the groups so that there will be three or four grades in each. It is unwise, however, to overload any one school with so many partially seeing children that there is not room for them to participate in regular grade activities.

Differentiated Groups

In some cities in which the number of children warrants separation into differentiated groups, it has been found advisable and expedient to establish certain classes for those with progressive eye difficulties, such as progressive myopia, and others for those with low vision or static eye conditions. The latter may often be able to use, without strain, smaller type than that which is considered advisable for those suffering from pathological conditions of the eye.

Placement of Mentally Subnormal Partially Seeing Pupils

The placement of pupils having more than one handicap should be determined by the greater handicap. Mental deficiency is unquestionably more serious than the physical handicap of defective vision. Hence, a child suffering from both should undoubtedly be placed in a class for the mentally subnormal and there be given all advantages possible for conserving sight. To place mentally defective children in sight-saving classes is as unfair to them as it is to their classmates and to the teachers. Not only are the methods of education different in the two types of classes, but, whereas the educational segregation of the mentally subnormal child may be desirable, it is considered dis-

advantageous to the child with defective vision as his only handicap.

In large communities where there may be a sufficient number of children suffering from both these defects, a special class may be established for mentally subnormal children having defective vision.

Placement of Pupils with Communicable Eye Diseases

The problem of dealing with communicable eye diseases must be solved in the same manner in which the problem of any other communicable disease is treated. However, where, in any community, there are enough children suffering from a communicable eye disease to warrant the establishment of a special class for them, the problem may be solved in this manner.

Classes in Junior and Senior High Schools

Sight-saving classes are established in Junior High Schools to care for the pupils in grades 7, 8 and 9. These classes are conducted in the same manner as are such classes in the elementary schools, increasing responsibility being placed upon the pupils for putting into practice the principles of saving their sight, in order that there may not be too great a transition between work in junior and senior high schools. In the latter, the usual method pursued is to place all partially seeing high school pupils in one center, or, in large cities, in two or more centers, in which special arrangements may be made for supervising the work and for supplying readers for required texts that are not available in large type. Such readers may be normally seeing pupils who are doing the same work that the partially seeing are carrying, or other specially assigned readers. The supervisor arranges for well lighted places in which reading aloud may be done without interference with the pursuits of other pupils.

Classes in Small Communities

In the United States there are thousands of children with serious eye difficulties who live in communities too small to support sight-saving classes. There are various ways of meeting such conditions:

1. The establishment of classes in consolidated schools offers the best solution to this problem, since transportation, one of the most difficult problems in the establishment of sight-saving classes, is provided for all children living beyond a specified distance from the school.

2. The establishment of classes in the demonstration school of teacher training institutions serves the double purpose of providing educational facilities for partially seeing children and of acquainting prospective teachers with the organization and administration of classes and the methods of teaching such children.

3. Special arrangements in regard to tuition may be made by which children living in communities near cities having sight-saving classes may attend them.

4. Partially seeing children may be boarded in cities having educational advantages to offer them.

5. Where transportation facilities admit, sight-saving classes may be established in a center to serve a county in whole or in part.

Possibility of Mixed Classes

In small communities in which there may be some partially seeing children but not a sufficient number to warrant the establishment of a sight-saving class, the plan has been tried of forming a class of children with different types of physical handicaps. Experience has shown that this is not practical; a classroom housing such children would have to be equipped to meet the needs of all the various groups, and the teacher should be skilled not only in the special methods applicable to each group, but should have at least

an intelligent comprehension of the medical problems presented by the many individual handicaps.

Occasionally, classes having two groups of deviates, such as partially seeing children and orthopedic cripples, have proved successful.

Rural Children

Rural children for whom none of the suggested arrangements can be made may derive some benefit from the large-type books and other material used in sight-saving classes. Some state libraries are now including such books, on request, in their traveling libraries.

A state supervisor is often able to give assistance to teachers of rural schools having such children in their group. Such assistance is well worth the effort and expense, since it results not only in helping the partially seeing child, but in making the teacher more conscious of the necessity for doing everything in her power to guard the eyes of the normally seeing.*

The Sight-Saving Class Teacher

The selection of the teacher of a sight-saving class is of paramount importance. To be successful, such a teacher should possess the essential qualifications of any teacher: a natural aptitude for teaching, the necessary fundamental training, and a great deal of initiative. Since the teacher of a sight-saving class must do a great deal of close eye work in order to save her pupils from too great eye use, she should have excellent sight.

Many states are now requiring special training for this work, the details of which are decided upon by the educational authorities. Although there is considerable difference of opinion regarding requirements, there is agreement on

* Material of assistance to rural teachers will be sent on application to the National Society for the Prevention of Blindness, Inc., 50 West 50th Street, New York, N. Y.

certain fundamentals, such as the satisfactory completion of accepted courses of training in: (1) organization and administration of sight-saving classes; (2) methods of teaching sight-saving classes; and (3) anatomy, physiology and hygiene of the eye, together with a sufficient understanding of refractive errors and common eye diseases to enable the teacher to safeguard the eyes of her pupils.

An increasing number of teacher-training institutions are offering courses of training.*

Superintendents who contemplate the establishment of sight-saving classes usually select teachers who are versatile, possess personalities fitting them for special work, and who have had at least three years of successful experience in grade teaching, and arrange that they attend courses for specialized training. Superintendents are then assured of having teachers familiar with the local situation and so trained that they may assume the responsibility of establishing and conducting successful classes.

Sight-Saving Class Supervision

Ocular Supervision

Ocular supervision should be maintained for pupils in sight-saving classes during the full period for which they are enrolled. (This should not, however, preclude the usual medical attention given to all children in the school system.) Such ophthalmological care may be given by private or school oculists; in addition, the oculist, supervisor, principal, teacher and parents should work together to save sight.

In addition to the regular health report, every teacher of a sight-saving class should be supplied with a record of the child's visual acuity, diagnosis of the eye difficulty, a statement as to whether or not glasses are prescribed, a copy of

* The National Society for the Prevention of Blindness publishes each year a list of colleges and universities offering courses of training.

the prescription, statements concerning: (1) treatment, when such is necessary; (2) the possibility of quiescent conditions becoming acute; (3) the amount of eye work the child is able to undertake; and (4) the time for the next eye examination.*

Wherever possible, ocular supervision should include visits to classrooms, in order that conditions under which the child is working may be checked and assistance be given to the teacher in carrying out instructions for eye use.

Educational Supervision

The responsibility for educational direction and supervision is divided between state and local authorities, especially in states which subsidize these classes. In such cases the state naturally assumes the greater share of responsibility for the development of the work and for the allocation of state funds to the local communities.

In cities having a sufficient number of sight-saving classes to warrant it, a supervisor should be appointed to take charge of the work. When the number of classes does not justify such an expenditure, one supervisor may serve all types of special classes. There is, however, a distinct advantage in having special supervisors, since the work of these classes differs materially from that of all other lines of specialized education. The duties of such supervisors are manifold. They are continually on the lookout for children requiring this type of education and arranging for them to attend sight-saving classes. They establish new classes as such become necessary, select and equip classrooms, assist sight-saving class teachers in solving administrative, pedagogic and ocular problems, and, in general, undertake the many adjustments necessary to assure the best results.

Supervisors, both state and local, act in co-operation with school superintendents in all matters relative to this special

* A folder containing the above records, the results of psychological and other tests, and any other information relative to the child will prove of value.

work. They use every opportunity to acquaint teachers in the building in which sight-saving classes are established with the problems of the special class teacher in order to secure the co-operation of the entire teaching corps.

Good supervisors do not stop with the work of the sight-saving classes; they realize that saving sight is a school and community responsibility. They hold conferences with principals, teachers, nurses, parent-teacher associations, civic and other community groups, through which they disseminate information on eye health and the necessary precautions that must be taken to guard the eyes of all.

Although supervisors must have as thorough a knowledge of eye conditions and of conditions affecting the eyes as is necessary for the conduct of this work, they must depend upon the medical profession for diagnoses and treatment; hence their fundamental training and experience should be educational rather than medical.

It has been proved that adequate supervision tends to reduce rather than to increase the cost of maintaining sight-saving classes.

Methods of Conducting Sight-Saving Classes

There are, in general, two methods of conducting sight-saving classes:

1. Co-operative plan, in which partially seeing pupils carry on all work requiring close use of the eyes in the special class, and all other activities with regular grade pupils.
2. Segregation plan, in which partially seeing pupils carry on all their activities in the special room.

Over 90 per cent of the classes in the United States are organized on the co-operative plan. Experience indicates that segregating a partially seeing child tends to emphasize his difficulties by depriving him of contact with normally seeing children of his own mental age and ability.

In the co-operative plan, the best results are obtained by

as close co-ordination as possible between the sight-saving class and the regular grades. This arrangement requires the most careful attention to program making on the part of both the special teacher and the grade teacher in order to avoid duplication and confusion.

In sight-saving classes, emphasis is placed on as much oral work as possible. All close eye work is carefully supervised; a period of close eye use is followed by one in which close eye use is not necessary. Short periods of eye rest should be part of the daily program in sight-saving classes.

Reciprocal Responsibilities

Co-operation Among Teachers

The special teacher and the grade teacher share the responsibility of educating partially seeing children. Each must work closely with the other in order to understand the problems and to co-operate in solving them. Through this co-operation the teacher of the sight-saving class is better able to keep her pupils up to standard and the teacher of the regular grade not only realizes the difficulties under which partially seeing children work, but learns preventive methods which may be applied to normally seeing children.

Co-operation with the Home

Home conditions greatly influence the welfare of children. If parents understand the aim of sight-saving classes, they are more ready to co-operate. Reciprocal visits do much to establish friendly relationships.

A teacher can hardly be expected to understand the problems that may arise from home conditions and environment unless she visits the home. Parents have a much better understanding of what the educational system is trying to accomplish if they see the child actually at work.

The Visiting Teacher

When the number of sight-saving classes in a community is large enough to justify the expenditure, it is desirable to have a special visiting teacher. Such a teacher should have the fundamental training of any visiting teacher. In addition, she must have an understanding of the principles and problems of the sight-saving class in order to be able to interpret them in the home. Her visits do not take the place of the visits of the teacher of the class. They are more or less for the purpose of making arrangements and adjustments, while the visit of the class teacher is for gaining a better understanding of her pupil's problems through an appreciation of his home life. Where social conditions exist in the home that are detrimental to the child in the sight-saving class, the visiting teacher, or, in case there is none, the teacher of the sight-saving class, should bring the home conditions to the attention of the school nurse or a reliable social agency.

Cost of Establishing a Sight-Saving Class

The budget necessary for the establishment of a sight-saving class must take into consideration the following: salary of teacher; furniture and equipment; special educational material, such as books in large type; special maps; globes; typewriters; paper; pencils; material for hand-work, etc.; and expenses of transportation. With the exception of the teacher's salary and the material that has to be replaced each year, the cost of the class should not be budgeted against one year; most of the equipment will last for several years.

The cost of lighting and decorating the room should be charged against general maintenance.

Financial Support of Sight-Saving Classes*

Since the state, in making education compulsory, includes children with seriously defective vision, it should assist in providing a type of instruction suitable to their needs. State aid is usually provided in accordance with state education laws. In general, methods of providing such aid come under five classifications:

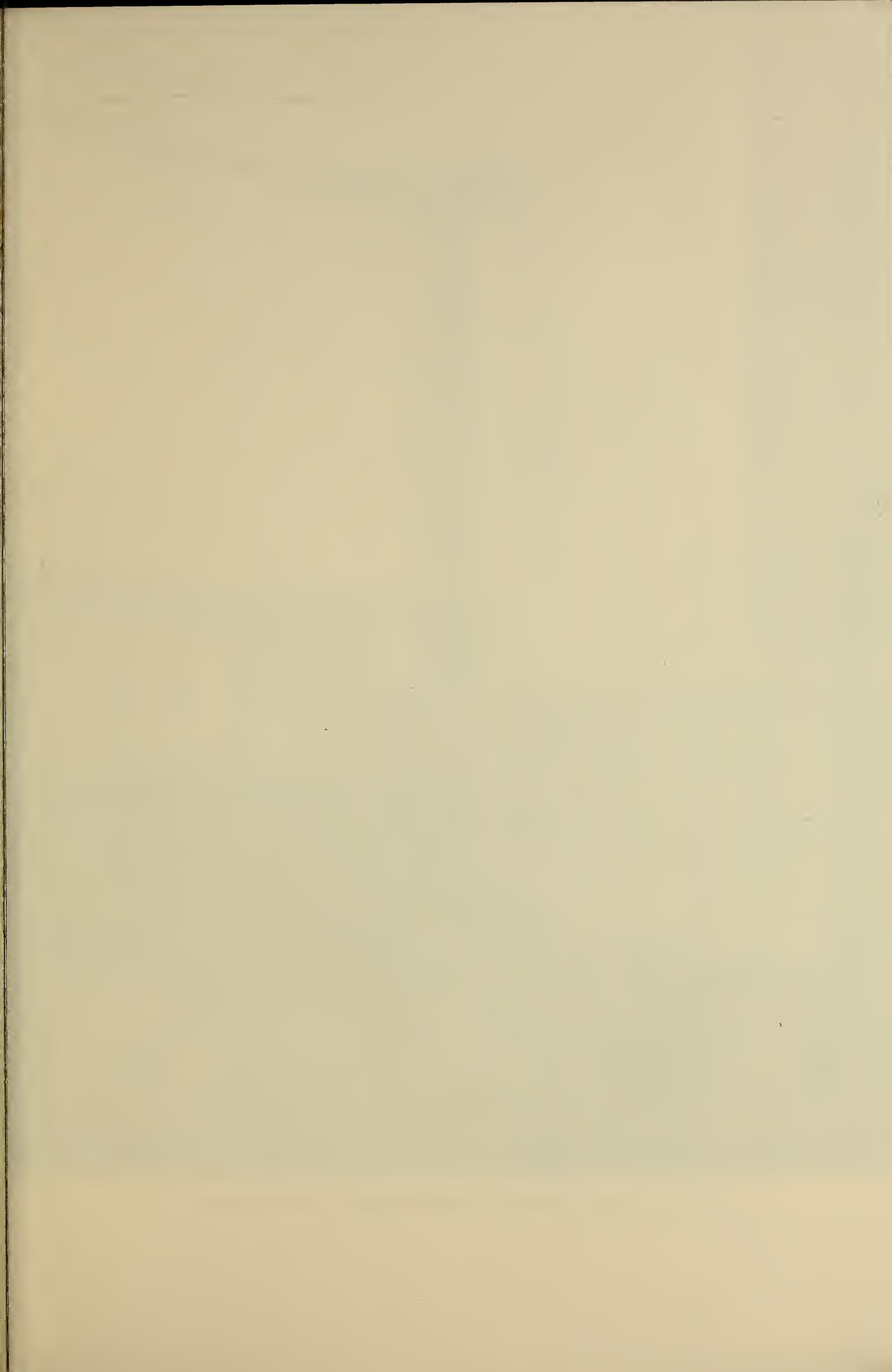
1. Appropriation of a per capita amount.
2. Appropriation of a general sum to be apportioned by the state director.
3. Appropriation to meet a certain percentage of the teacher's salary.
4. Equalization appropriation—the same amount for ten children in the special class as is appropriated for twenty-seven children in a regular grade.
5. Appropriation to provide a definite amount toward the teacher's salary, plus a percentage of the local outlay.

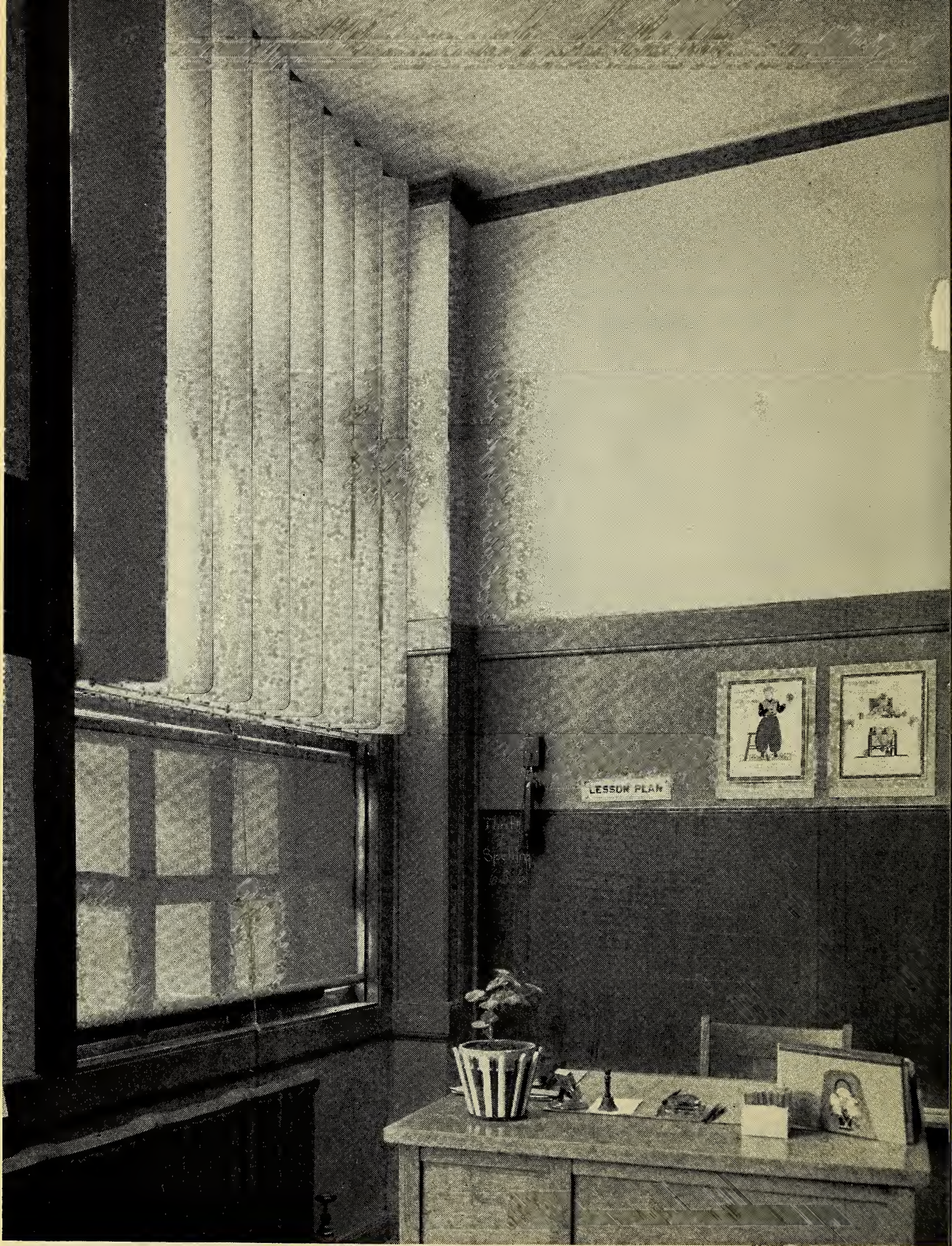
The present tendency is toward having appropriations for sight-saving classes included under provisions made for the education of all the physically handicapped.

Any state furnishing money for the promotion of these classes should reserve to itself some form of regulation, neither paternalistic nor oppressive, but rather in the nature of a partnership with the community, in which each bears its just share of responsibility. It would seem unwise to write detailed requirements into any law providing for sight-saving classes. Authority to set standards should be vested in the state department of education.

In many instances it is necessary for the local community to demonstrate the necessity for these classes before the state is willing to assume any responsibility in regard to their financial support.

* Through the Social Security Act, Federal aid may be made available for the education of handicapped children.





Vertical Louvers Have Been Found Successful in Some Areas

The Sight-Saving Classroom and its Equipment

Selection of School

Since sight-saving classes are not required in all schools, a centrally located building should be selected convenient to transportation facilities. If a modern building is available with arrangements for up-to-date natural and artificial illumination and equipment, the expense of establishing the class will be considerably lowered.

Size of Room

Even though the sight-saving classroom is to house a comparatively small number of pupils, it should be as large as an ordinary classroom, approximately 30 x 24 x 12 feet. Not only is it necessary for the pupils to move around a great deal in order to be able to see to the best advantage, but the material used in sight-saving classes is on a larger scale than that provided for regular grades, and therefore requires more space.

Illumination*

Correct illumination of any classroom is of the utmost importance. Not only is light essential for seeing, it affects the health of the eye and the general health. Educational procedures are often hampered because pupils cannot see well enough to carry on eye work.

Correct illumination, either natural or artificial, is that which provides adequate light for the task—well diffused, well distributed and without glare. The question of adequate intensity is somewhat an individual problem. In general, it may be said that there must be a sufficiently high intensity for the individual to be able to accomplish, without strain, a particular task to be undertaken. It is evident that the condition of the eyes and the type of task

* *Standards of School Lighting*, Illuminating Engineering Society and the American Institute of Architects, Illuminating Engineering Society, 51 Madison Avenue, New York, N. Y.

will be determining factors in deciding the intensity and type of illumination required. Since children in sight-saving classes have seriously defective vision, compensation in the form of increased illumination is necessary. Present-day standards indicate a minimum, sustained intensity of illumination of 15 foot-candles* for regular grade classrooms and 30 foot-candles for sight-saving classrooms. Light meters are now available for measuring intensities and should be considered as necessary a part of the equipment of every school as are thermometers.

Diffusion and Distribution of Light; Avoidance of Glare.—Lighting, whether natural or artificial, shall be such as to avoid glare, objectionable shadows and extreme contrasts, and to provide a good distribution of light. In artificial lighting systems lamps shall be so installed in regard to height, location, spacing, glassware, reflectors or other suitable accessories, as to accomplish these objects.

Natural Lighting.—A consideration of the outside environment of the classroom is important. A clear, open space is to be preferred. Ground floor rooms should be avoided because of the possibility of glare from snow, sand, or other highly reflecting surfaces. Moreover, other things being equal, rooms on upper floors are preferable to those on lower floors because of the increase in natural illumination.

Classrooms should be so oriented as to give a maximum of light with a minimum of glare. Experiments tend to indicate that east or west exposures meet these conditions, but so wide is the variation of climatic conditions in the vast expanse of the United States and its territories that many factors must be taken into account: ventilation, seasonal and diurnal changes in the position of the sun, as well as meteorological conditions, such as cloudiness and incidence of rainfall and snow.

* A foot-candle is the measurement of illumination from one standard candle on a surface one foot from the light source.

Unilateral lighting is desirable, since this reduces cross-lights and shadows to a minimum. If it is necessary to select a bilaterally lighted room, windows should be at the left and back of the pupils, with the back windows at a sufficient distance from the floor to prevent shadows on the working plane.

The minimum glass area recommended for sight-saving classrooms is 20 per cent of the floor area. Since the best light comes from the top of the window, the glass area should extend as near to the ceiling as possible. In order to insure sufficient natural illumination on the desks on the far side of the room, no room should be wider than twice the height of the glass area from the floor.

Experience indicates that the best results are obtained from narrow bastions and pillars; that the best placement is such that no window shall be nearer than seven feet to the front blackboard; that windows shall extend toward the rear of the room at least as far as the front of the last row of desks; that the sill shall be at least three feet, preferably four feet, from the floor.

Natural illumination may be controlled by two translucent, buff-colored shades in soft finish at each window. It has been found that these are effective in diffusing direct sunlight and in preventing glare. Shades in soft finish will not crack and are easily cleaned. The rollers of these shades should be placed at or near the center of the window, one directly below the other, the space between them covered by a V-shaped metal bar. Shades should be wide enough to prevent streaks of light from entering at the sides. To accomplish this, it is usually necessary, unless the windows are deeply recessed, to fasten the rollers on the bastions.

The plan of placing the roller of the upper shade below the roller of the lower shade is impractical. It necessitates fastening one roller considerably further out than the other in order to enable the shades to be operated. This causes a pulling away of the shades from the window, thus allowing

streaks of light to enter at the sides. It is, therefore, anything but an economy, although there may be a slight saving in the initial outlay.

In tropical latitudes and in places in which there is likely to be a reflected glare from snow, it has sometimes been found expedient to place a shade with roller at the lower part of the window so that the light may be controlled at eye level.

Experiments are being carried on with vertical louvers that will direct the light toward the front of the room, thus preventing glare in the eyes of the pupils.

Artificial Illumination.—In order to secure good seeing conditions, artificial illumination should be supplied for all classrooms. To maintain the indicated level of illumination in sight-saving classes of 30 foot-candles with a minimum of direct and reflected glare, with the light well distributed and diffused and with sharp shadows eliminated, totally indirect lighting should be used. If a slightly luminous bowl is desired for psychological reasons, at least 95 per cent of the light should be directed toward the ceiling.

Wiring and switches should be so arranged that the row of lighting fixtures on the window side and the row on the inner side of the room can be controlled independently. It is well known that the human eye is not able to judge accurately varying levels of illumination. Hence lamps are often not turned on when needed. The photo-electric cell control is being used to turn on and off automatically one or both rows of lighting units when daylight falls below or rises above the required level of illumination, thus assuring good light for all students at all times and relieving the teacher of the responsibility.

Maintenance and Efficiency of Illumination.—Efficiency of illumination is dependent not only on the initial installation, but on care of walls, ceilings, windows, transoms and luminaires. These should be cleaned regularly in order to

maintain standards, and intensities of illumination should be measured periodically. An electric lamp that is no longer giving illumination in proportion to the amount of current being used, should be replaced.

Blackboards

The large wall area occupied by blackboards is somewhat of a handicap to good lighting and seeing conditions. The black areas absorb some of the light that would otherwise be reflected to the desks. Shades the color of the window shades are sometimes used to cover the blackboards when not in use. Special lighting units are desirable to provide adequate illumination on the blackboard.

Walls, Ceilings and Woodwork

In a temperate zone, buff-colored walls will give good reflection values and are more cheerful than gray, green or blue, although these colors may be preferred in tropical and sub-tropical sections of the country. White, oyster white or very light cream ceilings are recommended, having a reflection factor of approximately 80 per cent.

Woodwork in a sight-saving classroom, as in any classroom, may be in a good neutral tone, or in a harmonizing color that is not fatiguing to the eyes.

Walls, ceilings and woodwork should be in dull finish to prevent glare.

Closets

Built-in closets, large enough to hold the material used in sight-saving classes, have proved practical for many reasons. Closets that jut out into the room often prove accident hazards for children with seriously defective vision. Closets with glass doors are a source of glare.

Boards

There are many new types of boards being tried out in slate, silicate and composition material. The boards chiefly

in use are black but various colors are being experimented with—buff, white, green and blue. Upon the color of the board will depend the color of the chalk or crayon used. Slate boards require refinishing from time to time. Chamois is excellent for keeping boards clean.

A great deal of board surface is required, since pupils in sight-saving classes do much of their limited close eye work on the boards.

Boards in three sections, working on the principle of windows, have proved of great value; they can be pulled up and down so that children may work more nearly at their own eye level than at a stationary board.

Furniture

Manufacturers of modern school furniture are tending more and more toward the construction of hygienic, adjustable seats and desks. The selection of the particular type of desk to be used is a matter of preference. There are, however, certain underlying principles that are essential. The seat should be hygienic and adjustable. It should fit the child so that he may be comfortably seated, with both feet resting easily on the floor. A seat that is too deep from front to back may cause such irritations of muscles and tendons that the child will sit forward in an endeavor to relieve the strain, and thus lose all proper body balance. An open space at the back of the seat should be provided to give room for the thighs, thus bringing the back rest into proper position.

The desk top should be adjustable from several stand-points: (1) *Height*—Some children are tall, others short, from the waist up. (2) *Angle*—Desks should be so constructed that the top will lift to any desired angle from the horizontal to the vertical plane, in order that books and other material may be at the correct eye focus and that children may sit in correct position. Desk tops should be equipped with adjustable rods so that books and papers



Adjustable, Movable Seat and Desk Approved for Sight-Saving Class Use



Adjustable, Movable Seat and Desk Approved for Sight-Saving Class Use

may be held in place on the sloping surface in a position in which they may be seen with the greatest eye comfort. (3) *Distance*—It should be mechanically possible to push the desk top backward or forward in order that the distance of the material from the eyes may be adjusted for individual differences.

Another point to be kept in mind is that adjustments should be made to correspond to the growth of the child. All too often seats and desks are adjusted only at the beginning of the school year.

Seats and desks should be movable so that they may be placed in any part of the room in which the most desirable illumination on the working plane may be obtained. Children in sight-saving classes should be trained and encouraged to place desks so that they will receive the best light on their work. In general, if desks are turned at a slight angle away from the window, there will be less possibility of glare from the skyline. Tables and chairs should be so placed that no child will either face the light or sit in his own shadow.

The choice of the rest of the furniture in a sight-saving classroom will be influenced by the age groups to be accommodated. In all cases there should be work tables and chairs of the same type and color of wood as the desks; a teacher's desk and chair to match the work tables; and, in case there is no manual training room in the building, a work bench with tools; a sand table for project work, and at least one easel, preferably two, for brush work, are desirable.

Seats and desks, as well as all other furniture in the room, should be in dull finish, to prevent glare.

Equipment*

Typewriters.—In every sight-saving class there should be at least one typewriter (preferably two or more) with the large type especially adapted to the use of sight-saving

* See Appendix I.

class pupils; hygienic typewriter tables and chairs; and copy stands that will place any necessary material to be copied directly in front of the pupil.

A special set of lessons in typing for sight-saving class pupils is published by the Detroit Board of Education.*

Books.—Experiments with various sizes and kinds of type for use in sight-saving classes are being carried out. There are, as yet, no definite conclusions, although there is an expression of opinion that 18 or 24-point in clear, simple type without serifs proves the most desirable. Many children in sight-saving classes prefer an 18 to a 24-point type because more can be included in the eye span in the former than in the latter.

Maps, Globes, Charts.—Maps furnished for sight-saving classes should be in strong outline and without detail. Several firms are now manufacturing excellent outline maps; others will be glad to omit names and other details if requested to do so.

Reading, phonetic, and arithmetic charts used in the primary grades are, as a rule, sufficiently clear for sight-saving class children, provided they are permitted to go close enough to be sure of seeing them without eyestrain.

Paper.—A slightly rough, unglazed, light buff manila paper in sheets 9 x 12 inches has been found practical. In modern education, unlined paper is recommended. If, however, ruled paper is desired, green lines have usually been found to be more acceptable than black. Lines, if used, should be from about three-quarters of an inch to one inch apart, and only dark enough to serve as a guide.

Pencils, Crayon.—Pencils with fairly soft, thick, heavy lead making a broad, clear line are best adapted for the use of sight-saving class children.

* *Sight-Saving Study in Typewriting*, Department of Statistics and Publications, Board of Education, 1354 Broadway, Detroit, Michigan. Price, 20 cents.

Large-sized chalk (one inch in diameter, in white and light yellow) makes a broad, heavy, even line.

Pens, Ink.—Since a great deal of work in sight-saving classes is done on the typewriter, there is less need for the use of pen and ink in these classes than in regular grades. Pens making a broad, heavy line are desirable. India ink is preferable to the usual school ink; the two may be mixed in cases in which they do not neutralize each other.

Material for Motivated Handwork.—Only such handwork is desirable as can be correlated with the regular work of the class and can be carried on without eyestrain. Clay, plasticine, material for sand-table use, finger painting and other forms of hand work that may be motivated, should be provided. Such work is of great value in creative undertakings; it serves as a desirable change from that requiring close eye use, and offers interesting home occupations.

It is sometimes desirable to make available a small sum of money which may be spent by the teacher for materials not usually included in school supplies.

Pupils in sight-saving classes usually have the benefit of advantages offered to regular grade pupils for music appreciation and radio programs. If such opportunities are not available, the sight-saving classroom should be supplied with a victrola or similar musical instrument. Equipment which includes the possibility of using the *Talking Book** will prove of great benefit, particularly to junior and senior high school sight-saving class groups.

Returning the Sight-Saving Class Pupil to the Regular Grade

With the special ocular and general physical care accorded children in sight-saving classes, it is not infrequent

* Particulars regarding the *Talking Book* may be obtained from the American Foundation for the Blind, 15 West 16th Street, New York, N. Y.

that the improvement in eye conditions is great enough to enable some of them to return to the regular grade. This fact would seem sufficient warrant for keeping children up to the academic standards and for using the non-segregation plan of education.

Transportation

In many instances it is necessary for children to travel some distance to reach a sight-saving class. The problems of transportation are solved in various ways, according to the resources of the community.

It is desirable, whenever possible, to make use of existing transportation facilities. In the case of young children an older brother or sister may be transferred to the school attended by the sight-saving class child, in order to accompany him. In some cities, busses used for transportation of other groups have been made available.

In general, the board of education assumes the expenses of transportation for the pupil and for the guide, in cases in which it is necessary for someone to accompany him.

Hot Lunches

It is advisable that children in sight-saving classes have hot lunches. In a building having no cafeteria or other luncheon service, it is usually necessary to provide simple equipment for preparing food.*

* Appendix II.



Excellent Sight-Saving Reading Racks and Copy Holders

Appendix I.—Equipment and Material for Sight-Saving Classes

The following list is given for the convenience of those engaged in sight-saving class activities. It is not intended to be inclusive of all possible material; there are doubtless on the market many other products of equal value. Names and addresses are not given for the purpose of advertising any commercial concerns, but merely to facilitate the obtaining of material.

Seats and Desks

Desk No. 641-M-37, Theodor Kundtz Company, Main and Elm Streets, Cleveland, Ohio.

Better Sight Desk, American Seating Company, 9th and Broadway, Grand Rapids, Mich.

Books

In 24-point type:

Clear Type Publishing Committee, 36 Elston Road, Upper Montclair, N. J.

A Child's Garden of Verses, Robert E. Naumberg, National Society for the Prevention of Blindness, Inc., 50 West 50th Street, New York, N. Y.

In 18-point type:

Everyday Manners—Sight Saving Edition, American Printing House for the Blind, 1839 Frankfort Avenue, Louisville, Ky.

Girl Scout Handbook, Large Type Edition, National Equipment Service, Girl Scouts, Inc., 570 Lexington Avenue, New York, N. Y.

Some of the Harter Publishing Company (2046 East 71st Street, Cleveland, Ohio) material found in five-and-ten-cent stores is excellent for sight-saving classes. Careful

selection must be made, giving consideration to size, kind and spacing of type, and to color and kind of illustrations.

Window Shades

Buff-colored, translucent shades in soft finish, two for each window, rollers at center. (Single, adjustable shades are not recommended.) Shades should have protection bar between rollers to prevent glare, and be wide enough to prevent light from entering at sides.

Wa-Shade Sales Company, 118 East 28th Street, New York, N. Y.

Luther O. Draper Shade Company, Spiceland, Ind.

Forse Manufacturing Company, Anderson, Ind.

Maxwell's Shade Service Bureau, Chicago, Ill.

Louvers

Dalmo Litecontrol, Dalmo Sales Corporation, 511 Harrison Street, San Francisco, Calif.

Maps*

Globes:

Graphic-Project Globe for Sight-Saving Classes, A. J. Nystrom & Company, 3333 Elston Avenue, Chicago, Ill.

Wall Maps and Seat Maps—special sight-saving class maps from:

A. J. Nystrom & Company, Chicago, Ill.

George F. Cram Company, Indianapolis, Ind.

Universal Map Company, 22 Park Place, New York, N. Y.

Dobson, Evans Company, Columbus, Ohio.

Rand McNally & Company, 270 Madison Avenue, New York, N. Y.

Milton Bradley Company, 111 Eighth Avenue, New York, N. Y.

"World Map," Quaker Oats Co., 141 W. Jackson Boulevard, Chicago, Ill.

* Many teachers find it satisfactory to make some of their own maps.

Pencils

J. S. Staedtler's Extra Black, No. 6120, J. S. Staedtler, Inc., 55 Worth Street, New York, N. Y.

Weatherproof Faber No. 6639; Faber Editor Verisoft No. 1, Eberhard Faber Pencil Co., 37 Greenpoint Avenue, Brooklyn, N. Y.

Eagle Auditor No. 286; Veri Black No. 315 Eagle; Mikado No. 5174; Eagle Pencil Company, 703 East 13th Street, New York, N. Y.

Pens

Speed Ball No. 4, Howard Hunt Pen Company, 377 Broadway, New York, N. Y.

Esterbrook Drawing and Lettering Pen No. 1, Esterbrook Steel Pen Manufacturing Company, 277 Broadway, New York, N. Y.

Chalk

Freart Forsyte, white and yellow, American Crayon Co., Sandusky, Ohio, and local dealers.

Poster chalk, all colors, Milton Bradley Co., 111 Eighth Avenue, New York, N. Y. Binney & Smith Co., 41 East 42nd Street, New York, N. Y.

Paints

Liquid Tempera Colors, American Crayon Co., Sandusky, Ohio, and local dealers.

Artista Powder Paints (all colors put up in one-pint packages); Artista Tempera Poster colors, Binney & Smith Co., 41 East 42nd Street, New York, N. Y.

Shaw Finger-Paint in sets, cans or jars, Binney & Smith Co. Ready-to-use paints or powders in dull finish, to be obtained locally.

Typewriters and Copy Holders

Bulletin Type, Pitch No. 6, upper and lower case for sight-saving classes, Underwood.

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Bulletin Type No. ~~16A~~, Remington. *no 17*
Portable No. ~~105~~ (cuts stencils), Remington. *Type 105*
Amplitype (cuts stencils), Royal.
A) Bulletin Caslon, upper and lower case, No. 27, L. C. Smith.
Shafer SS Reading Rack, L. W. Shafer Co., 232 Vine Street, Cincinnati, Ohio.
Copy Holder, Theodor Kundtz Company, Main and Elm Streets, Cleveland, Ohio.

Paper

Sight-Saving Paper, lined if desired long or short way, The Diem & Wing Paper Co., Gilbert Avenue Viaduct, Cincinnati, Ohio.

No. 56 Sight Conservation Paper, J. L. Hammett Co., 380 Jelliff Avenue, Newark, N. J.

Sub. 60, India Egg Shell Ticonderoga, size 9" x 12", lined if desired long or short way, R. H. Thomson Co., 184-190 Washington Street, Buffalo, N. Y.

Unprinted newspaper, tonal and construction paper, local dealers.

Multistamp

Outfit No. 5, Multistamp Co., 252 West 21st Street, Norfolk, Va.

Special Geometry Material

Plane Geometry Charts, Scott, Foresman & Co., 623 South Wabash Avenue, Chicago, Ill.

Note: Sight-saving class supervisors and teachers should always be on the lookout for pictures, games and other material that will meet the needs of sight-saving class pupils. Local communities afford opportunities for selection. New material is so constantly being made available, that no specified list is here given.

A. Remington #5 with bulletin type 48
B. To cut stencil sight case 47
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Small Portable Light Meters

Sight Light Indicator, Model No. 719, Weston Electrical Instrument Co., Newark, N. J.

General Electric Light Meter, General Electric Co., Nela Park, Cleveland, Ohio.

Appendix II.—Equipment for Serving Hot Lunches

In schools in which there is no cafeteria, the present tendency is to have the children bring something from home, either in thermos bottles (soup, cocoa, cooked vegetables, stew, etc.) or to have similar food packed in jars to be heated at school. This saves the time of the teacher and the children otherwise taken for the preparation of food, washing dishes, etc.

In case it is necessary to prepare a hot dish, the following list of equipment will be found useful: gas or electric plate or small stove; individual plates; soup bowls; glasses; sauce dishes; knives; forks; teaspoons; dessert spoons; sugar bowl; large pitcher; salt shakers; large stew pan; large double boiler; bread knife; vegetable knives; large spoon; dish pan; dish drainer; can opener; dish mops; a dozen tea towels; paper napkins; soap.



